HP NC6170 Dual Port PCI-X 1000SX Gigabit Server Adapter User Guide

June 2007 (Second Edition)
Part Number 331901-00B

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About This Guide

This guide can be used for reference when installing the HP NC6170 Dual Port PCI-X 1000SX Gigabit Server Adapter.

WARNING: To reduce the risk of personal injury from electric shock and hazardous energy levels, only authorized service technicians should attempt to repair this equipment. Improper repairs can create conditions that are hazardous.

Technician Notes

WARNING: Only authorized technicians trained by HP should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.

WARNING: To reduce the risk of personal injury from electric shock and hazardous energy levels, do not exceed the level of repairs specified in these procedures. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create conditions that are hazardous.

WARNING: To reduce the risk of electric shock or damage to the equipment:

- **Disconnect power from the system by unplugging all power cords from the power supplies.**
- **Do not disable the power cord grounding plug. The grounding plug is an important safety feature.**
- **Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.**

CAUTION: To properly ventilate the system, you must provide at least 7.6 cm (3.0 in.) of clearance at the front and back of the server.

CAUTION: The computer is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

NOTE: Any indications of component replacement or printed wiring board modifications may void any warranty.

Where to Go for Additional Help

HP updates networking software frequently to include new functionality and features. Complete the following steps to get the latest drivers, firmware, and documentation.

1. Go to the HP website (http://www.hp.com).
2. Click **Support and Troubleshooting Information** from the left menu bar.
3. Type the product name in the **for product** box and press **Enter**. For example, type NC370T.
4. Download the drivers, firmware, or documentation as needed.

Telephone Numbers

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.

For HP technical support:

- In the United States and Canada, call 1-800-652-6672.
- Outside the United States and Canada, refer to

  www.hp.com

1

Introduction

Overview

The HP NC6170 Dual Port PCI-X 1000SX Gigabit Server Adapter is a high performance, stand-alone Ethernet adapter with a single, integrated, dual port controller chip that delivers 1000 Mb/s Ethernet over fiber cabling. For best performance, install the adapter in a 64-bit/133MHz, PCI-X slot. The adapter provides failover capabilities with other Gigabit and 10/100 adapters installed in the workstation or server. The NC6170 Gigabit Server Adapter is a supported option for selected HP ProLiant servers.

For the latest functionality, features, and operating system support for this server adapter, refer to the networking page at

(http://h18004.www1.hp.com/products/servers/networking/index-nic.html)

Hardware Overview

The HP NC6170 Dual Port PCI-X 1000SX Gigabit Server Adapter supports current standards for system manageability and power management, such as Advanced Configuration and Power Interface (ACPI) and Advanced Power Management (APM). The adapter has two fiber LC ports and LED indicators for activity/link. Refer to Table 1-1 for a description of LED operations.

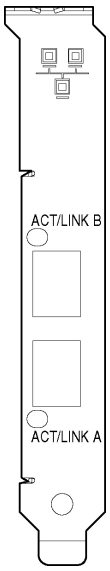

Figure 1-1: NC6170 Gigabit Server Adapter

LED Indicators

The HP NC6170 Gigabit Server Adapter LED indicators operate as described in the following table.

Table 1-1: LED Operations for the HP NC6170 Gigabit Server Adapter

LED	Status	Description
ACT/LINK	On	Link to the adapter is established. The adapter is receiving power and the cable connection is secure.
	Off	No link to the adapter is established. The adapter is not receiving power or the cable connection is faulty.
	Flashing	The adapter is receiving direct packets or broadcast packets for this specific adapter. When sending packets, the ACT light is also active due to network acknowledgements received.

2

Installing the Adapter

Overview

This chapter describes installation precautions, how to install the adapter, and how to attach the fiber network cable.

WARNING: To avoid the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with your equipment before attempting installation of the adapter.

Many servers are capable of producing energy levels that are considered hazardous. Users should not remove enclosures, nor should they bypass the interlocks provided for removal of these hazardous conditions.

Installation of this adapter should be performed by individuals who are both qualified in the servicing of computer equipment, and trained in the hazards associated with products capable of producing hazardous energy levels.

NOTE: Before removing the cover of your server, refer to the HP documentation for the proper methods for installing a PCI card and avoiding electric shock hazards.

Electrostatic Discharge Precautions

A discharge of static electricity from a finger or other conductor can damage components on the adapter. This can make the adapter inoperable. In addition to the following information, refer to Appendix B for more precautions.

To prevent electrostatic damage, observe the following precautions:

- Always properly ground yourself when touching a static-sensitive component or assembly.
- Avoid hand contact by transporting and storing parts in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free locations.
- Place containers on a grounded surface before removing the contents.
- Avoid touching pins, leads, or circuitry.

Installing the Adapter in a Server

Refer to the HP ProLiant server documentation for additional information on how to safely install a PCI card in the server.

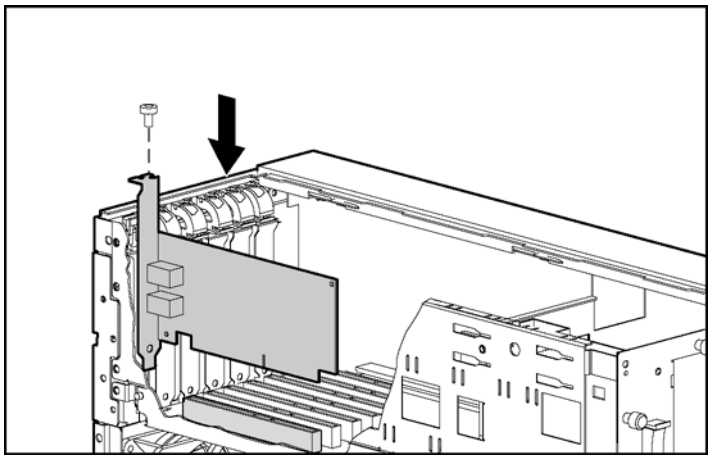

Figure 2-1: Installing the adapter in a server

WARNING: If the server is not PCI Hot Plug compliant, power it down and unplug the power cord from the power outlet before removing the server cover. Failure to do so may damage the adapter or server.

1. Remove the power cord and server cover. Then remove the cover bracket from a PCI/PCI-X slot.

WARNING: To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching them.

2. Firmly seat the adapter in the PCI/PCI-X slot and secure the adapter bracket.
3. Replace the server cover and plug in the power cord.

Connecting the Network Cable

The HP NC6170 Gigabit Server Adapter uses LC fiber ports. These ports support multimode fiber with a maximum cable length dependent on the fiber type, mode, and cable size. Refer to Appendix C for maximum cable lengths.

To insert the LC connector into the adapter port, line up the slot on the fiber connector with the adapter and gently push until the retainers click into place.

A

Regulatory Compliance Notice

European Notice

Products bearing the CE marking comply with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community, and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN 55022 (CISPR 22)—Electromagnetic Interference
- EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11)—Electromagnetic Immunity
- EN61000-3-2 (IEC61000-3-2)—Power Line Harmonics
- EN61000-3-3 (IEC61000-3-3)—Power Line Flicker
- EN 60950 (IEC 60950)—Product Safety

BSMI Notice

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Korean Notice

사용자 안내문 : B 급 기기

이 기기는 비업무용으로 전자파적합등록을 받은 기기이오니, 주거지역
에서는 물론, 모든 지역에서 사용 하실 수 있습니다.

제조자 : 인텔 코오퍼레이션

Laser Compliance

The fiber optic module contains a laser that is classified as a "Class 1 Laser Product" in accordance with US FDA regulations and the IEC 60825-1. The product does not emit hazardous laser radiation.

WARNING: Use of controls or adjustments or performance of procedures other than those specified herein or in the laser product's installation guide may result in hazardous radiation exposure. To reduce the risk of exposure to hazardous radiation:

- **Do not try to open the module enclosure. There are no user-serviceable components inside.**
- **Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.**
- **Allow only HP Authorized Service technicians to repair the unit.**

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States. This device is classified as a Class 1 laser product as defined by IEC 60825-1.

B

Electrostatic Discharge

Overview

To prevent damage to the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place containers on a grounded surface before removing the contents.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an HP authorized reseller install the part.

NOTE: For more information on static electricity or assistance with product installation, contact your HP authorized reseller.

C

Specifications

HP NC6170 Gigabit Server Adpater Specifications

Table C-1: NC6170 Gigabit Server Adapter Specifications

Specification	Description
Network Controller Chipset	Intel® 82546 EB Dual MAC/Phy/SERDES
Bus Type	PCI-X/PCI
Bus Width	32- or 64-bit
Bus Speed (MHz)	33/66/100/133
Data Transfer Method	Bus Master DMA
On-board Memory	128 KB
Power Requirement	1000 mA @ 5V max
Data Transmission Rate	1000 Mb/s (Full-duplex)
Standards Supported	IEEE 802.3z, 802.3x, 802.1p, 802.1Q, 802.3ad (static configuration mode only)
Dimensions	6.6 x 4.8 inches (L x W), 16.5 cm x 12.2 cm (including bracket)
Connectors	Two LC low profile
Cable Distances	See Table C-2
Interrupts Supported	Automatically configured
Temperature Range	Operating: 0°C to 55°C / 32°F to 131°F Storage: -65°C to 85°C / -85°F to 185°F
Relative Humidity	Operating: 10% to 90% Storage: 5% to 95%
Agency Approvals	• FCC Class B • VCCI Class B • BSMI Class A • CISPR 22 Class B • EN60950 • MIC Class B • EN 55022 Class B • EN55024-1 • UL • Canada UL • ICES-003 Class B

Fiber Cable Specifications

To connect to the network, the NC6170 Server Adapter uses a 1000Base-SX fiber transeiver with an LC fiber connector. Table C-2 describes the mode, cable size, and maximum distance specifications for this adapter.

Table C-2: Fiber Cable Maximum Distances for 1000Base-SX

Mode	Size	Max Distance
Multimode	62.5/125 μm	220 meters
Multimode	50/125 μm	550 meters